

NED University of Engineering and Technology, Karachi.

Department _____

Programme _____



F/QSP 11/17/00

Course Profile

COURSE CODE& TITLE PH-127 (APPLIED PHYSICS FOR ENGINEERS)	SEMESTER <input type="checkbox"/> SPRING <input type="checkbox"/> FALL	CREDIT HOURS TH <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 0 PR <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0
PREREQUISITE COURSE(S) None	DATE OF APPROVAL	BATCH

COURSE CONTENTS

S. No.	Topic	Contents	Remarks (if any)
1	Introduction and Properties of Matter and Fluids	Introduction of Engineering Physics, Elasticity and modulus of elasticity, Bending of beams, Cantilever, Steady and turbulent flow, Bernoulli's theorem and Viscosity, Surface tension, Surface energy and Angle of contact.	1. Physics (Halliday, Resnick & Krane) 2. Elasticity by Robert William & Soutas-Little
2	Heat and Thermodynamics	Heat, temperature and theories of heat, Adiabatic and isothermal processes and The four laws of thermodynamics Thermodynamic functions, Efficiency of heat engines, Carnot's cycle, Entropy.	Physics (Volume 1) by Halliday, Resnick & Krane.
3	Heat and Thermodynamics	Reversible process and cycles, Thermodynamic equilibrium, Introduction to heat transfer mechanisms.	Physics (Volume 1) by Halliday, Resnick & Krane.
4	Waves and Optics	Waves and oscillations, Simple harmonic motion, Types of wave motion. Optics of light , Interference , Diffraction, Polarization	Physics (Volume 2) by Halliday, Resnick & Krane.
5	Waves and Optics	Double refraction, Dispersion, Types and uses of deviation lasers.	Physics (Volume 2) by Halliday, Resnick & Krane.
6	Electricity and Magnetism	Electric charges, Electric field, Electric potential, Coulomb's law, Gauss's law, Capacitors and dielectrics,	Physics (Volume 2) by Halliday, Resnick & Krane.
7	Electricity and Magnetism	Magnetic field , Magnetic force on current , Ampere's law	Physics (Volume 2) by Halliday, Resnick & Krane.
8	Electricity and Magnetism	Faraday's law, and Lenz's law.	Physics (Volume 2) by Halliday, Resnick & Krane.
9	Electricity and Magnetism	Electric current , Ohm's law,	Electricity and Magnetism

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		Magnetic properties of matter	
10	Sound waves	Speed of sound, Different types of sound waves.	Physics (Volume 1) by Halliday, Resnick & Krane.

TEXTBOOKS (Book Name, Authors, edition, Publisher, Year)

1. D. Halliday, R. Resnick and Krane, "Physics", John Wiley & Sons, volume 1, 11th ed. 2020.
2. D. Halliday, R. Resnick and Krane, "Physics", John Wiley & Sons, volume 2, 11th ed. 2020.
3. R. A. Serway and J. W. Jewett, "Physics for Scientists and Engineers", Golden Sunburst Series, 10th ed. 2019.
4. Electronic Devices, Thomas L. Floyd, Pearson, 2019.

COURSE LEARNING OUTCOME AND ITS MAPPING WITH PROGRAMME LEARNING OUTCOME

Sr. No.	CLOs	Taxonomy level	Programme learning outcome (PLO)
At the end of the course, the student will be able to:			
1	DISCUSS principle of physics; and explain the concept of classical physics to solve related problems	C2	PLO-1
2	USE the concept of physics for engineering problems	C3	PLO-2
3	PRACTICE of operating equipment/tools to understand principles of physics under supervision.	P3	PLO-1

REMARKS : *Suggested PLO's

Recommended by: _____

(Chairperson/Date)

Approved by: _____

(Dean/Date)